

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Currently Amended) An engine valve actuation system, comprising:
~~an intake valve moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid;~~
~~a cam assembly configured to move open and close an intake port associated with the intake valve ~~between the first end position and the second end position~~; and~~
~~an electromagnetic separate actuator electromagnetically operated to selectively close the intake port at a different timing than the cam assembly configured to selectively mechanically contact the intake valve to modify a timing of the intake valve in moving from the second end position to the first end position.~~
2. (Currently Amended) The engine valve actuation system of claim 1, wherein the electromagnetic separate actuator is a latching solenoid.
3. (Currently Amended) The engine valve actuation system of claim 2, wherein the electromagnetic separate actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil.

4. (Original) The engine valve actuation system of claim 3, further including a pivotable rocker arm operably coupling the cam assembly with the intake valve.
5. (Original) The engine valve actuation system of claim 4, wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve.
6. (Original) The engine valve actuation system of claim 5, further including a controller configured to move the armature and the core between a first position and a second position.
7. (Currently Amended) The engine valve actuation system of claim 6, wherein the controller is configured to apply a first current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to modify [[the]] a timing of the intake valve.
8. (Original) The engine valve actuation system of claim 7, wherein the electromagnetic actuator is configured such that the armature and the core remain at the first position when the controller removes the first current.
9. (Original) The engine valve actuation system of claim 7, wherein the controller is configured to apply a second current to the solenoid coil to move the

armature and the core from the second position to the first position to disengage from the rocker arm, the second current being opposite to the first current.

10. (Original) The engine valve actuation system of claim 9, wherein the electromagnetic actuator is configured such that the armature and the core remain at the second position when the controller removes the second current.

11. (Original) The engine valve actuation system of claim 9, wherein the controller is configured to apply a third current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to slow a closing velocity of the intake valve.

12. (Currently Amended) A method of controlling an engine having a piston moveable through an intake stroke followed by a compression stroke, comprising:

~~moving opening and closing an intake port associated with an intake valve via a cam between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid during the intake stroke of the piston; and~~

~~actuating operating a separate actuator having an electromagnetic solenoid associated with the intake valve when the intake port is open valve is away from the first end position to selectively close the intake port at a different timing than the cam assembly mechanically contact the intake valve to modify a timing of the intake valve in moving from the second end position to the first end position.~~

13. (Currently Amended) The method of claim 12, wherein actuating operating includes controllably moving a coupled armature and core of the electromagnetic separate actuator between a first position and a second position.

14. (Currently Amended) The method of claim 13, wherein controllably moving includes applying a first current to a solenoid coil of the electromagnetic separate actuator to move the coupled armature and core from the first position to the second position to engage a rocker arm operably coupled with the intake valve to modify [[the]] a timing of the intake valve.

15. (Original) The method of claim 14, wherein controllably moving includes applying a second current to the solenoid coil to move the coupled armature and core from the second position to the first position to disengage from the rocker arm, the second current being opposite to the first current.

16. (Original) The method of claim 15, further including applying a third current to the solenoid coil to move the coupled armature and core from the first position to the second position to engage the rocker arm to slow a closing velocity of the intake valve.

17. (Currently Amended) An engine, comprising:
a block defining at least one cylinder and a cylinder head having at least one intake port passageway leading to the at least one cylinder;

at least one intake valve associated with the at least one intake port moveable between a first end position to prevent a flow of fluid through the at least one intake passageway and a second end position to allow a flow of fluid through the at least one intake passageway;

a cam assembly connected to the intake valve to move open and close the at least one intake port the intake valve between the first end position and the second end position; and

an electromagnetic actuator configured a separate actuator electromagnetically operated to selectively close the intake port at a different timing than the cam assembly mechanically contact the intake valve to modify a timing of the intake valve in moving from the second end position to the first end position.

18. (Currently Amended) The engine of claim 17, wherein the separate electromagnetic actuator is a latching solenoid.

19. (Currently Amended) The engine of claim 18, wherein the separate electromagnetic actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil.

20. (Original) The engine of claim 19, further including a pivotable rocker arm operably coupling the cam assembly with the intake valve, wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve.

21. (Currently Amended) An engine valve actuation system, comprising:

an intake valve ~~moveable between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid;~~

~~a cam assembly configured to open and close an intake port associated with move the intake valve between the first end position and the second end position;~~

~~[[and]]~~

an electromagnetic actuator configured to affect closing of the intake port selectively hold the intake valve in position between the first end position and the second end position, wherein the electromagnetic actuator is a latching solenoid having a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil; and

a rocker arm disposed between the cam assembly and the electromagnetic actuator, the rocker arm configured to engage the intake valve.

22. (Cancelled).

23. (Cancelled).

24. (Currently Amended) The engine valve actuation system of claim [[23]] 21, wherein the core includes an end configured to selectively engage an end of the rocker arm opposite to the intake valve.

25. (Previously Presented) The engine valve actuation system of claim 24, further including a controller configured to move the armature and the core between a first position and a second position.

26. (Currently Amended) A method of controlling an engine having a piston moveable through an intake stroke followed by a compression stroke, comprising:

moving an intake valve via a rocker arm to open and close an intake port cam ~~between a first end position that blocks a flow of fluid and a second end position that allows a flow of fluid~~ during the intake stroke of the piston;

engaging a cam with an end of the rocker arm to affect movement of the intake valve; and

actuating engaging an electromagnetic solenoid associated with the intake valve ~~with an end of the rocker arm opposite the cam to selectively hold the intake valve port open in position between the first end position and the second end position, wherein~~ engaging includes controllably moving a coupled armature and core of the electromagnetic actuator between a first position and a second position.

27. (Cancelled).

28. (New) The engine valve actuation system of claim 25, wherein the cam is configured to engage an end of the rocker arm opposite the core.

29. (New) A valve actuation system for an engine having at least one cylinder and at least one intake port associated with the at least one cylinder, comprising:

- an intake valve;
- a cam assembly mechanically linked to the intake valve to open and close the at least one intake port; and
- an electromagnetic actuator selectively mechanically linked to the intake valve to selectively close the at least one intake port at a different timing than the cam assembly.

30. (New) The engine valve actuation system of claim 29, wherein the electromagnetic actuator is a latching solenoid.

31. (New) The engine valve actuation system of claim 30, wherein the electromagnetic actuator includes a solenoid coil and an armature coupled with a core, the armature and the core being movable together relative to the solenoid coil.

32. (New) The engine valve actuation system of claim 31, further including a pivotable rocker arm operably coupling the cam assembly with the intake valve.

33. (New) The engine valve actuation system of claim 32, wherein the core includes an end configured to selectively engage the rocker arm opposite to the intake valve.

34. (New) The engine valve actuation system of claim 33, further including a controller configured to move the armature and the core between a first position and a second position.

35. (New) The engine valve actuation system of claim 34, wherein the controller is configured to apply a first current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to modify a timing of the intake valve.

36. (New) The engine valve actuation system of claim 35, wherein the electromagnetic actuator is configured such that the armature and the core remain at the first position when the controller removes the first current.

37. (New) The engine valve actuation system of claim 36, wherein the controller is configured to apply a second current to the solenoid coil to move the armature and the core from the second position to the first position to disengage from the rocker arm, the second current being opposite to the first current.

38. (New) The engine valve actuation system of claim 37, wherein the electromagnetic actuator is configured such that the armature and the core remain at the second position when the controller removes the second current.

39. (New) The engine valve actuation system of claim 37, wherein the controller is configured to apply a third current to the solenoid coil to move the armature and the core from the first position to the second position to engage the rocker arm to slow a closing velocity of the intake valve.

40. (New) A method of controlling an engine having a piston moveable through an intake stroke followed by a compression stroke, comprising:

moving an intake valve to open and close an intake port via a cam that is mechanically linked to the intake valve; and

moving the intake valve to close the intake port via an electromagnetic actuator that is selectively mechanically linked to the intake valve.

41. (New) The method of claim 40, wherein moving the intake valve to close the intake port via an electromagnet actuator includes controllably moving a coupled armature and core of the electromagnetic actuator between a first position and a second position.

42. (New) The method of claim 41, wherein moving the intake valve to close the intake port via an electromagnet actuator includes applying a first current to a solenoid coil of the electromagnetic actuator to move the coupled armature and core from the first position to the second position to engage a rocker arm operably coupled with the intake valve to modify a timing of the intake valve.

43. (New) The method of claim 42, wherein controllably moving includes applying a second current to the solenoid coil to move the coupled armature and core from the second position to the first position to disengage from the rocker arm, the second current being opposite to the first current.

44. (New) The method of claim 43, further including applying a third current to the solenoid coil to move the coupled armature and core from the first position to the second position to engage the rocker arm to slow a closing velocity of the intake valve.